9 Oct 2001

FINAL REPORT

ON GRANT N00014-98-1-0880

NCPA ENHANCEMENT FOR PHYSICAL ACOUSTICS

Henry E. Bass
University of Mississippi
National Center for Physical Acoustics

The overall objective of this grant is to enhance and maintain a strong physical acoustics research program at the National Center for Physical Acoustics (NCPA) that will improve our ability to recruit first-rate scientists and students and carry out effective, ONR-supported research. Specific objectives of this grant are to support research and recruitment by enhancing the infrastructure in physical acoustics through (a) graduate fellowship support, (b) modernization of scientific presentation capabilities, and (c) publishing a monograph series on the elastic properties of materials.

Graduate Student Support. This support phased out the fellowship program stated by previous ONR funding. Michael McPherson and Wayne Prather were provided support to continue their fellowships. Mr. Prather graduated in August, 1999 with a Ph.D. and Michael McPherson is scheduled to graduate in December 2001 with a Ph.D. Meeting our commitment to these fellowship students has helped to strengthen our recruitment efforts for graduate students who will become part of the new crop of Ph.D.'s available to conduct ONR sponsored physical acoustics research.

Modernization of Scientific Presentation Capabilities. This objective supported purchase of state-of-the-art visual presentation equipment and upgrades to existing computer and electrical lines in the NCIPA theater and conference room. Two multimedia projection systems with accompanying laptop computers and a high-resolution digital overhead projection system were outfitted in the NCPA theater and conference room. The necessary upgrades to computer and electrical lines were completed. The modernization of our scientific presentation capabilities has impacted NCPA hosted conferences, visiting scholars and professional recruitment. The new presentation equipment raised the level of scientific reporting and collaborating for the ONR sponsored Thermoacoustics Review Meeting and Resonance Meeting, the CNR Visiting Scientists Program, professional recruitment, and other meetings and cooperative research activities.

Publishing a Monograph Series on the Elastic Properties of Materials. This objective supported the plan and preparation of a series of papers written by a team of authors on the elastic properties of materials. Drs. Henry Bass, Moises Levy, and Richard Stern as editors-in-chief recruited 92 authors from academia, industry and federal government agencies to complete a four-volume series entitled *Handbook of Elastic Properties of Solids, Liquids and Gases.* The

Handbook was published by Academic Press in 2001 and is currently available to the public. A companion searchable bibliographic database in compact disc form is currently being completed. The database contains elastic properties of a wide-variety of materials. A promotional CD sampler of the database is scheduled to be released by December 2001. The elastic properties of materials are of import to the design of Naval vessels. The *Handbook* brings a visibility and renown to NCPA that has heightened our opportunities to recruit excellent researchers in the field of materials science.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE	3. REPORT DYPE AND DATES COVERED
	09 Oct 01	**Final 15 Sep 98 -- 14 Sep 99**

4. TITLE AND SUBTITLE
NCPA Enhancement for Physical Acoustics

5. FUNDING NUMBERS
PE 61153N
G N00014-98-1-0880

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Office of Naval Research
ONR 331
800 North Quincy Street
Arlington, VA 22217-5660

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; Distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*
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14. SUBJECT TERMS **graduate fellowship support, modernization of scientific presentation capabilities, elastic properties of materials**

15. NUMBER OF PAGES
3

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	